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IMITATION AND SOCIAL REINFORCEMENT IN A CLASSROOM SETTING  
FOR INSTITUTIONALIZED DELINQUENTS

BY  
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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Imitation and Social Reinforcement in a Classroom Setting for Institutionalized Delinquents" submitted by Teresa Davis in partial fulfilment of the requirements for the degree of Master of Education.



## ABSTRACT

The classroom behavior of eight institutionalized juvenile offenders and their teacher was video taped during twelve forty minute class periods to determine the frequency of imitative behavior and contingent social reinforcement. The video tapes were played back by two independent observers who recorded the frequency of imitative behavior and contingent social reinforcement. The results of the study provide evidence that while in the classroom delinquent adolescents and their teacher frequently imitated one another and dispensed or received significantly more reward than punishment contingent upon that information. Reward, both vicarious and direct, was found to be an important independent variable causally related to imitation.



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## Chapter 1

### INTRODUCTION

#### Purpose of the Study

The persistence of delinquent behavior despite the attempts of institutions for juvenile offenders to "correct" such behavior is evidenced by the finding that as many as 60 percent of those entering juvenile correctional institutions in the United States are readmissions (Stuart, 1969, p. 60).<sup>1</sup> Of equal note is the fact that during the process of institutionalization many cases of adolescent deviation are converted into severe criminal offenders who "graduate" from juvenile to adult correctional institutions (Shaw, 1963, p. 145).

The "peer group culture" has been pinpointed for these reversals of official intentions (McCorkle and Korn, 1954; Clemmer, 1950; Cohen and Short Jr., 1961) but how the peer group achieves these effects has not been identified or described in behavioral terms. Nor has the staff behavior which contributes to these effects been documented.

Researchers interested in operationally defining the specific interaction patterns which eventuate in continued deviance have suggested studying interaction within the institution in terms of imitation and social reinforcement (Patterson, 1969; McDavid and McCandless, 1962). They surmise that the behavioral repertoires displayed by members of the delinquent peer group are acquired on a day to day basis through

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<sup>1</sup>Juvenile and adult recidivism rates for Canada are not available. Hackler, 1971.



observation and imitation of the behavior of other peers. They also hypothesize that the observation and imitation of one member of the peer group by another is governed by the reinforcement schedules dispensed by the delinquent peer group and members of the staff. In other words, deviant behavior is modeled and reinforced in day-by-day interactions between staff and peers.

Three observational studies conducted in an institutional setting by Buehler, Patterson and Furniss (1966) provide data to support the hypothesis that social reinforcement is provided by the delinquent peer group for deviant behavior. Their studies show that delinquent behavior on the part of the peer group and its members occurs and is reinforced on 88 percent of the occasions when it occurs. The validity of the proposition regarding both imitation and social reinforcement however has not been reported in the literature.

The purpose of the present study was to investigate the processes of imitation and social reinforcement in an institution for juvenile offenders. The specific aims of the study were to observe the behavior of staff and peers to determine the frequency of imitative behavior and to classify and analyze the social reinforcement dispensed by staff and peers contingent upon the occurrence of that imitative behavior.

#### Review of the Literature

Imitation is a behavioral change process involving at least two people: an observer and a model. The observer (O) is said to imitate a model (M) when observation of the behavior of M, or of expressions attributing certain behavior to M, affects O so that O's subsequent



behavior becomes more similar to the observed, or alleged, behavior of M (Bandura and Walters, 1963). This definition of imitation in the dyad where one O imitates one M may be extended to a group situation involving two or more Ms and a single O; or a single M and two or more Os. According to this definition exposure to M's response per se can produce imitation, however, reinforcement has been identified as a significant (although not necessary) variable causally related to O's imitation of M.

Use of reinforcement terminology here follows in part that of Verplanck (1957) who defined reinforcement as the presentation of a reinforcing stimulus following and contingent upon the occurrence of a certain response. If it can be shown under specified conditions that the occurrence of an environmental event, contingent upon some response of the organism, alters the occurrence of that response on later occasions, then that event is considered to be a reinforcing stimulus. Reinforcing stimuli are considered in this study to be of two primary types: first, positively reinforcing stimuli (rewards) by definition increase the strength or probability of occurrence of responses to which they are contingently related; and second, negatively reinforcing stimuli (punishments) by definition decrease the strength or probability of occurrence of responses upon which their presentation is contingent. Withdrawal of reinforcement does not appear to have been investigated in the imitation literature and is not considered in this context.

A paradigm which interrelates the concepts of imitation and reinforcement might be described as:



$S_1$	$S_2$	$S_3$	$R$	$S_4$
Situation	Behavior of M	A negative or positive consequence is attached to the behavior of M (termed vicarious reinforcement)	$O$ imitates M	A positive or negative consequence is attached to the behavior of $O$ (termed direct reinforcement)

According to this paradigm, any act of M is potentially a modeling stimulus. It becomes one in actuality, however, only when there is a change in the behavior of  $O$  such that  $O$ 's behavior becomes more like that of M.

Extensive data indicate that the reinforcing consequences dispensed at  $S_3$  and  $S_4$  increase or decrease the probability that  $O$  will imitate the behavior of M. The following section presents and summarizes this data.

### (1) Vicarious Reinforcement

#### - contingent reinforcement to M ( $S_3$ )

Exposing  $O$  to the presentation of a reinforcing stimulus to M, after and contingent upon a certain response by M, increases the imitation of M by  $O$ .

A number of studies with human subjects have confirmed this hypothesis using as a reward knowledge of task-success results (Bisese, 1966; Luchins and Luchins; 1955; Rosenbaum, Chalmers and Horne, 1962), utterance of the word "good" by M (Marlowe, Breecher, Cook and Doob, 1964; Marston, 1966), tokens (Clark, 1965; McDavid, 1962), praise by the experimenter (Bandura, Frusec and Menlove, 1967b), praise plus fruit juices and candy (Bandura, 1965), and maternal affection (Walters, Leat and Mezei, 1963; Walters and Parke, 1964).



(2) Vicarious Punishment

- contingent punishment to M ( $S_3$ )

Exposing O to the presentation of a punishing stimulus to M, after and contingent upon a certain response by M, decreases the imitation of M by O.

The hypothesis that training under vicarious punishment conditions gives rise to decrements in imitation appears to have been confirmed in only two studies (Luchins and Luchins, 1955; Walters et al., 1963).

On the other hand, a large number of studies have been reported which used experimental designs confounding the effects of concurrent vicarious punishment and vicarious reinforcement (Bandura et al., 1967a; Bandura and Kupers, 1964; Bandura and Whalen, 1966; Liebert and Allen, 1967). Imitation was produced in these experiments by exposing Os to Ms who took tokens and praised themselves for satisfactory performance, but reprimanded themselves for unsatisfactory performance. Generally, these experiments indicate that vicarious reward for desired responses on the part of M concurrent with vicarious punishment for non-desired responses on the part of M effectively elicits subsequent imitation in O.

(3) Direct Reinforcement

- contingent reinforcement to O ( $S_4$ )

The more O is presented with reward following a response similar to M's prior response, the more O exhibits imitative behavior.

In a variety of tasks human Os have exhibited increased imitation to obtain rewards such as candy (Field, 1952; Hicks, 1965; May, 1966), fruit juice plus toys (Bandura, 1965), utterance of the word "good" by



E (Baer and Sherman, 1964; Kanfer and Marston, 1963), E's approval (Mischel and Frusec, 1966), and tokens (Clark, 1965).

(4) Direct Punishment

- contingent punishment to O (S<sub>4</sub>)

The more O is presented with a punishing stimulus following a response similar to M's prior response, the less O exhibits imitative behavior.

Few studies appear to have been reported on the effects of contingent punishment of O's imitative behavior. De Rath (1964) and Kanareff and Lanzetta (1958) found that Os warned by E not to imitate exhibited less imitation than Os given no such warning. In these studies the punishment manipulation involved a verbal representation of punishment rather than actual punishment.

Another aspect of the imitation paradigm that has been empirically examined is the effect of variations among reinforcement conditions. Several investigators (Bandura et al., 1967a; Kanfer and Marston, 1963; Luchins and Luchins, 1955; Marlowe et al., 1964; Marston, 1966) found that Os trained under vicarious reinforcement conditions exhibited more imitation than Os trained under conditions in which M received no reinforcement. Several other experiments (Bandura, 1965; Walters and Parke, 1964; Walters, Parke and Cane, 1965) found vicarious reward training produced more imitation than vicarious punishment training, imitation being measured under free-response conditions. One interpretation of these results is that the different vicarious reinforcement conditions tended to produce behavioral dispositions of different strengths although this conclusion is only tentative. As a result of training O becomes



disposed to imitate M. For convenience (rather than necessity), O's tendency to imitate M is termed a "behavioral disposition" to imitate M, following Campbell (1961). This use of behavioral disposition should be acceptable because the conceptualization is independent of processes (if any) hypothesized to underlie the behavioral disposition (Campbell, 1963). It may be argued that the varying reinforcement training conditions affect the probability that imitation will occur.

The experimental findings referred to in the preceding paragraphs are best integrated and explained using Bandura's theoretical viewpoint (1968, 1969). According to Bandura the mechanism for the acquisition of imitative behaviors is that of observational learning, in which imitative or matching behaviors are acquired by O through simple exposure to M's response, independent of O's overt response or of its reinforcement. Specifically, Bandura assumes that stimuli from M's behavior elicit perceptual responses in O that becomes associated on the basis of temporal contiguity with the stimuli provided by the environment (e.g. M's behavior). After repeated contiguous stimulation, these perceptual responses came to form verbal or imaginal representations of the stimuli involved. These representational systems mediate response retrieval for overt responses corresponding to those of M. Thus, according to Bandura, it is primarily on the basis of stimulus contiguity and symbolic mediation that imitative behaviors are acquired. The rate and level of observational learning are conceived to be determined by a variety of perceptual, motoric, cognitive and incentive variables (Bandura, 1969). These variables include setting conditions (e.g. the saliency and complexity of the modeling cues), the availability of necessary component



responses in O's behavioral repertoire, and overt and covert rehearsal of the matching imitative response. However, Bandura assumes that the performance of imitative responses, once they are learned, is governed by extrinsic, self-administered, or vicariously experienced reinforcing events.

While there is convincing laboratory evidence that the performance of imitative responses is governed by reinforcing events virtually nothing is known about the effects of two or more reinforcing variables on the incidence of imitation. None of the preceding studies appear to have incorporated all of the reinforcement conditions (nonreinforcement, vicarious reinforcement and direct reinforcement). Further, the influence of the social situation on the relationship between imitation and reinforcement has not been examined. Almost without exception, the studies reviewed employed an experimental design in which reinforcement was dispensed by an agent with whom Os had no previous contact and in a social setting which differed from their own. Reinforcement may have different behavioral effects under conditions in which the reinforced Ms and Os are members of the same group who are in a "real life" setting interacting with the same social agents (Bandura, 1969, p. 32). A logical extension of the research on imitative behavior would be to investigate how the performance of imitative responses is governed by reinforcing events in a natural setting.

The present investigation, conducted in an institution for juvenile offenders, attempted, through naturalistic observation of the behavior of staff and delinquent youth, to determine the frequency of imitative behavior. As well, the reinforcement consequences dispensed



by staff and peers contingent upon that imitation was evaluated to determine its behavioral effects.



## Chapter 2

### PROCEDURE

#### Setting and Scope of the Study

The setting for the study was the Youth Development Center (Y.D.C.), a provincial institution for male and female juvenile offenders. To be committed by a juvenile court judge to the Center, a boy must be between twelve and sixteen years old and a girl must be between twelve and eighteen years old: and judged delinquent.

The Director of Y.D.C. suggested that a teacher and a group of students interacting in one of the Center's classrooms be the focus of the study. Given the manner in which the investigator wanted to collect the data and the fact that the Center had just opened, a classroom setting seemed most appropriate. Accordingly, the sample for this investigation consisted of a volunteer teacher and a group of students selected by the teacher and principal.

#### Subjects

The Teacher. The teacher that volunteered to assist with the study was a male, 31 year old Caucasian. He had completed the requirements for his Bachelor's degree in Education and was working towards a Bachelor of Arts degree in Mathematics at the University of Alberta. He had eight years of teaching experience prior to his employment as a mathematics teacher at the Y.D.C. in September, 1970. This was his first teaching experience in an institution for juvenile offenders.



The Students. One group of eleven students was selected by the teacher and principal to be the student subjects for this study. Data collection could not be completed on three of the originally selected eleven students because of the students unexpected removal from the class due to either staff decision or elopement. Descriptive data on the student subjects is contained in Table 1. Table 2 provides information regarding class attendance during the data collection period.

#### Data Collection

The data for the study were collected in two steps, the first extending from November 8 to November 27, 1970; the second extending from December 20, 1970 to February 28, 1971.

Step One. The classroom behavior of the teacher and student subjects was video taped during the last class period of the morning (11:00 - 11:40 A.M.) for twelve consecutive days.<sup>1</sup> The video tape recording package was installed in the classroom two days prior to the actual data collection in order to acclimatize the subjects to the presence of the recording equipment.<sup>2</sup> The teacher then acquainted the student subjects with the equipment, explaining that their behavior and his would be video taped during that particular class period for the next two weeks.

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<sup>1</sup>This length of time was selected because two weeks was the maximum length of time the video tape recording packages could be out in the field on loan; and also because the number of tapes available to store the data was limited.

<sup>2</sup>Placement of the audio video recording equipment is illustrated in Appendix A. A description of the equipment is contained in Appendix B.



Table 1  
 Information Regarding Student Subjects for Sex,  
 Age, Race, Length of Residence and Reason  
 for Admission to the Y.D.C.

Subjects	Sex <sup>1</sup>	Age (Yrs.) <sup>2</sup>	Race <sup>3</sup>	Length of Residence <sup>4</sup> (weeks)	Reason for Admission
S <sub>1</sub>	M	14.5	M	7	Breaking and entering; theft; shoplifting
S <sub>2</sub>	F	15.5	C	4	Unlawfully drove vehicle; left scene of accident
S <sub>3</sub>	F	15.5	M	3	Theft under \$50
S <sub>4</sub>	F	14.5	C	16	Assault
S <sub>5</sub>	F	13.5	C	17	Assault
S <sub>6</sub>	M	14.5	M	4	Breaking and entering
S <sub>7</sub>	F	15.0	I	39	Theft under \$50
S <sub>8</sub>	F	15.0	M	25	Theft under \$50; Probation viola- tion

1. Sex

F - Female  
M - Male

2. Age at beginning of observation

3. Race

M - Metis  
C - Caucasian  
I - Indian

4. Length of residence at beginning of observation



Attendance in this instance means the student may have:

---

(1) arrived Late but remained until the end of the class period  
 (2) arrived on time and remained for the whole period  
 (3) arrived Late and left shortly thereafter  
 (4) arrived on time and left later in the period  
 (5) walked in and out of the classroom a number of times during the period.

Subject	Number of Classes	Number of Classes Not Attended	Attendance	AbSENce	Reason(s) for
S1	11	1	Unknown		
S2	4	8	Eloped, confined, then requested that she not be a study subject		
S3	10	2	Unknown		
S4	7	5	Eloped, confined, or Unknown		
S5	11	1	Unknown		
S6	5	7	Confined, eloped		
S7	9	3	Confined, unknown		
S8	11	1	Unknown		

Class Attendance During the Time of Data Collection  
 (November 10 - November 27, 1970)

Table 2



He further explained that the investigator would use the video tapes of their behavior to complete a research project for her Master's thesis at the University of Alberta. He also requested that the student subjects not touch the equipment.

Ten minutes prior to the students' arrival for their 11:00 A.M. class the investigator would place a video tape on the recorder, adjust the camera, and leave the classroom. At 11:00 A.M. the teacher would turn the recording equipment on. At the end of the class period the investigator would return to the classroom to turn off the equipment and collect the video tape. This procedure was followed during the twelve data collection days. The twelve forty minute video tapes were then stored until December 20, 1970 when Step Two of the research project was commenced.

Step Two. The second data collection step consisted of playing back the video tapes and having two independent observers record and categorize behavior using an event sampling technique. The event sampling technique was based on the following paradigm:

S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	R	S <sub>4</sub>
Situation	Behavior	Reward-Punishment Consequences Attached to the Behavior of M	0 Imitates	Reward-Punishment Consequences Attached to the Behavior of 0
Classroom 11:00 - 11:40 A.M.	Student or Teacher	Dispensed by Student(s) Teacher 0	Student or Teacher	Dispensed by Student(s) Teacher M

According to this paradigm three types of M-0 dyads could be



observed: (1) teacher-student, (2) student-teacher, and (3) student-student. The M and O in any given imitative sequence could be observed to experience one of four possible reinforcement consequences (reward, punishment, reward-punishment combined, and nonreinforcement) dispensed by one, two or all of the following: teacher, student, M and/or O. The paradigm combined molar and molecular observational targets after Kerlinger (1964, p. 510). The molar observational target was a large observational whole defined as imitation. The molecular observational targets were smaller segments of behavior defined as reinforcement. The molar and molecular observational targets were defined in the following manner.

Imitation. This behavior was operationally defined as an event in which O observes the behavior of M and then picks up the behavior of M. That is, O's behavior becomes more similar to the observed behavior of M, or O's behavior changes to match that of M. This change occurs in a social situation in which M has not communicated intent to evoke such a change in O. This latter sequence would be considered a direct influence attempt (Polansky, Lippitt and Redl, 1950), p. 321).

Reinforcement. This term referred to a behavioral event defined either as reward or punishment.

Reward. Reward was defined as any behavior that occurs during, or contingent upon, a modeling response by M and/or an imitation response by O that could be scored as:

- (1) Bales' Interaction Category 1, Seems Friendly.
- (2) Bales' Interaction Category 3, Agrees.
- (3) Proximity (defined as being within three feet of M or O).

Criteria used for classifying reward behavior are presented in Appendix C.



Punishment. Punishment was defined as any behavior that occurs during, or contingent upon, a modeling response by M and/or an imitation response by O that could be scored as:

- (1) Bales' Interaction Category 10, Disagrees.
- (2) Bales' Interaction Category 12, Seems Unfriendly.

Criteria used for classifying punishment behavior are presented in Appendix D.

The two independent observer recorders used a combination of individual observation and scanning to categorize the subjects' behavior using the foregoing definitions. The twelve video tapes were played back and the attention of the individual observer recorder was focused on each subject. This procedure involved a number of replays of each foot of video tape. Once an imitative sequence was observed the video tape segment containing that sequence was replayed by the observer and the following data recorded: (1) the name of the M and O, (2) a behavioral description of the imitative sequence, and (3) the video tape footage of the imitative sequence.

Once all the video tapes had been observed by the two independent observers and the imitation data obtained, the tapes were replayed again to allow for the scoring of the reinforcement consequences dispensed to M and O in each of the imitative sequences. The reinforcement scores were obtained by one observer, with the second observer scoring forty randomly selected imitative sequences as well, in order to establish observer reliability.

Appendix E contains an example score sheet used by the two observers.



### Observer Reliability

Observer reliability was established prior to scoring the subjects behavior in Step Two using a video tape of the same subjects during another class period. A male graduate student in the Department of Educational Psychology at the University of Alberta worked with the writer during numerous training sessions to establish reliability. Practice sessions were facilitated by the fact that both observers had over sixty hours of practice scoring group interaction according to Bales' Categories for Interaction Process Analysis (Bales, 1950; 1970) prior to scoring the data for this study.

Percentage reliability scores were computed according to the following formula:

$$\text{Percent of agreement} = \frac{\text{agreements}}{\text{agreements} + \text{disagreements}}$$

Observer reliability data are included in Appendix F. Observer reliability ranged from 81.5 to 99.2 percent.



## Chapter 3

### THE FINDINGS

The purpose of this study was to observe the classroom behavior of institutionalized delinquent students and their teacher in order to determine the frequency of imitative behavior. Classification and analysis of the reinforcement consequences dispensed by the teacher and students during and contingent upon the occurrence of that imitative behavior was a second subject.

The findings will be presented as follows:

- (1) Frequency of Imitative Behavior
- (2) Behavioral Disposition to Imitate
- (3) Reinforcement Dispensed During and Contingent upon Imitation
  - (a) Type of Reinforcement Dispensed
  - (b) Type and Frequency of Reinforcement Exchanged between M and O
  - (c) Type and Frequency of Vicarious and Direct Reinforcement
- (4) Relationship between Imitation and Reinforcement

#### Frequency of Imitative Behavior

Table 3 presents the imitation scores for each of the delinquent students and their teacher. In total, 329 imitative sequences, or an average of 27.4 imitative sequences every forty minute class period were observed.

The data presented in Table 3 reveals that the O who imitated a



Table 3

Number of Imitative Responses Emitted by Each of the  
Delinquent Students and Their Teacher

Subjects	Observers									Total
	S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>	S <sub>5</sub>	S <sub>6</sub>	S <sub>7</sub>	S <sub>8</sub>	T	
<b>Models</b>										
S <sub>1</sub>	-	0	0	5	3	8	2	10	20	48
S <sub>2</sub>	0	-	0	4	21	0	0	0	1	26
S <sub>3</sub>	1	0	-	1	0	3	21	4	2	32
S <sub>4</sub>	0	1	0	-	17	0	2	0	3	23
S <sub>5</sub>	2	24	1	15	-	2	0	0	8	52
S <sub>6</sub>	5	0	3	0	2	-	1	2	7	20
S <sub>7</sub>	3	0	23	0	1	1	-	6	0	34
S <sub>8</sub>	16	0	3	0	2	4	9	-	2	35
T	33	1	3	2	7	9	0	4	-	59
Total	60	26	32	27	53	27	35	26	43	329



given M most often tended, in turn, to be most frequently imitated by that M. For example,  $S_7$  was imitated most often by  $S_3$ . Conversely,  $S_3$  was imitated most often by  $S_7$ . It would appear that the frequency of M's imitation of O could be broadly predicted if the number of times O imitated M were known. Another aspect of these data is that Ms and Os who imitated each other most often tended to imitate other subjects considerably less frequently.  $S_2$ , for example, imitated  $S_5$  twenty-four times, imitated  $S_4$  and T once, and never imitated the other subjects.

The data in Table 3 also reveal that all of the students except  $S_7$  imitated the teacher. Conversely, the teacher imitated all of the students except  $S_7$ . Why the teacher was not modeled by this student remains one of the unanswered questions of this study.

The number of times each subject was an M and an O is presented in Table 4.

A chi square analysis (Maguire, 1971) of the data in Table 4 reveals that for the total group the difference between the number of times the subjects were Ms and the number of times they were Os was not significant ( $\chi^2 = 0$ ,  $df = 1$ ). Further chi square analysis reveals that for each subject the difference between the number of times they modeled behavior and the number of times they imitated was not significant ( $\chi^2_{\text{Total}} = 6.53$ ,  $df = 8$ ). These findings suggest reciprocity of imitation; each subject imitated at a rate equitable with the number of times other subjects imitated him or her.

Table 5 presents the number of imitative sequences observed according to the three types of M-O dyads. The reinforcement findings are presented in the context of these M-O dyads.



Table 4

Number of Modeling and Imitative Responses Emitted by  
Each of the Delinquent Students and Their Teacher

Subject	Number of Times a Model	Number of Times an Observer
S <sub>1</sub>	48	60
S <sub>2</sub>	26	26
S <sub>3</sub>	32	32
S <sub>4</sub>	23	27
S <sub>5</sub>	52	53
S <sub>6</sub>	20	27
S <sub>7</sub>	34	35
S <sub>8</sub>	35	26
T	59	43



Table 5

Number of Imitative Responses Observed According to  
the Type of Model-Observer Dyad

Type of M-O Dyad	Number of Imitative Sequences
Student-Student	227
Teacher-Student	59
Student-Teacher	43



Summary. The important findings of the foregoing section are:

- (1) 329 imitative sequences during the twelve forty minute class periods were observed.
- (2) The number of imitative sequences observed according to the type of M-O dyad were: 1) 227 sequences of student-student imitation, 2) 59 sequences of teacher-student imitation, and 3) 43 sequences of student-teacher imitation.
- (3) The frequency of M's imitation of O could be broadly predicted if the number of times O imitated M were known.
- (4) Each subject imitated at a rate equitable with the number of times other subjects imitated him or her.

#### Behavioral Disposition to Imitate

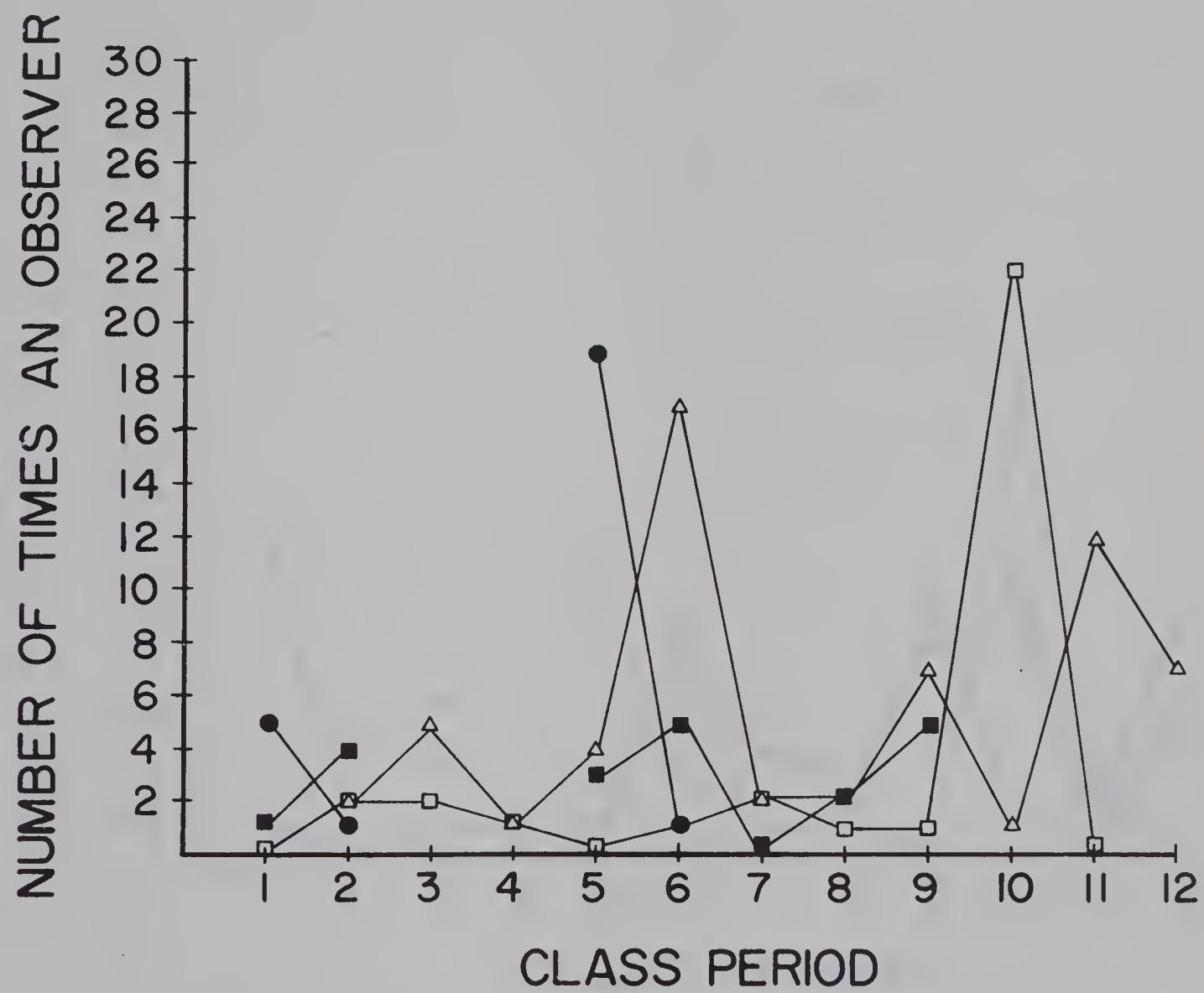
O's tendency to imitate M is termed a "behavioral disposition" to imitate M, following Campbell (1961). The behavioral disposition of O to imitate is another framework within which to examine the frequency of imitative behavior. The following figures (Figures 1 and 2) present the behavioral dispositions of each subject. The figures reveal that for each subject there were marked variations in the strength of their behavioral disposition to imitate over the twelve class periods. Each subject appeared to have a unique behavioral disposition, not matched by any other subject.

#### Reinforcement Dispensed During and Contingent Upon Imitation

Table 6 is presented as a key to the reinforcement and subject abbreviations which are used in the following section.

Type of Reinforcement Dispensed. Tables 7 and 8 present the





$S_1$

$S_2$

$S_3$

$S_4$



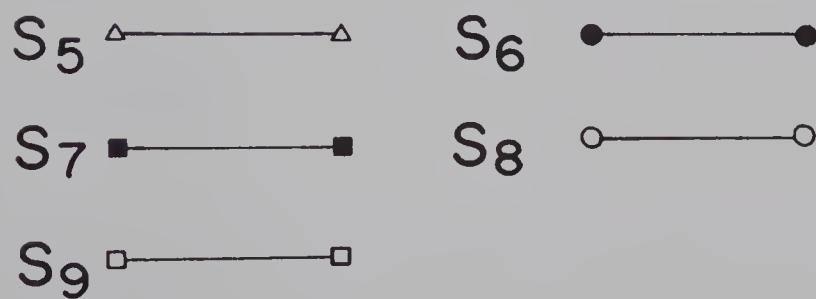
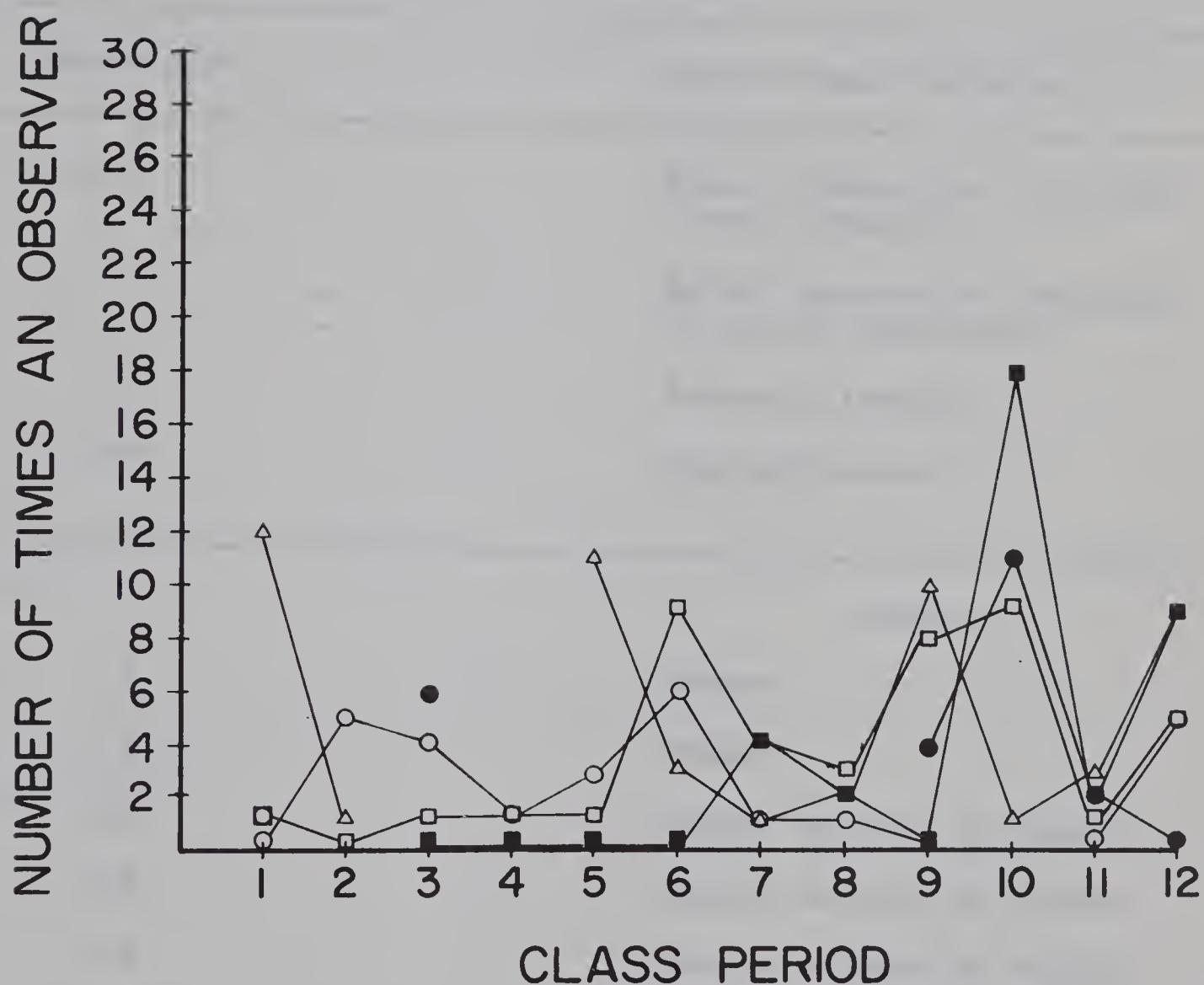




Table 6  
Key for Reinforcement and Subject Abbreviations

Abbreviation	Reinforcement Variables
+	Bales' Interaction Categories 1 and 3 (Reward)
-	Bales' Interaction Categories 10 and 12 (Punishment)
/	Proximity (Reward)
**	Nonreinforcement
	Subjects
T	Teacher
P	Student
T-P	Teacher imitated by Student
P-T	Student imitated by Teacher
P-P	Student imitated by Student



Table 7

Type of Reinforcement (Vicarious) Dispensed to M when M is a Student and O is the Teacher (P-T Imitation)

Reinforcement	% of Total Sequences Students Reinforced	% of Total Sequences Teacher O Reinforced
<b>Reward</b>		
+	13.9	13.9
/	23.2	32.5
+, /	9.3	13.9
<b>Total</b>	<b>46.4</b>	<b>60.3</b>
<b>Punishment</b>		
-	0.0	2.3
<b>Reward-Punishment Combination</b>		
+, -	0.0	0.0
-, /	0.0	18.6
+, -, /	2.3	9.3
<b>Total</b>	<b>2.3</b>	<b>27.9</b>
<b>Nonreinforcement</b>		
**	51.2	9.3



Table 8

Type of Reinforcement (Direct) Dispensed to 0 when M is a Student and 0 is the Teacher (P-T Imitation)

Reinforcement	% of Total Sequences Students Reinforced	% of Total Sequences Student M Reinforced
<b>Reward</b>		
+	18.6	13.9
/	18.6	48.8
+, /	4.7	9.3
<b>Total</b>	<b>41.9</b>	<b>72.0</b>
<b>Punishment</b>		
-	0.0	0.0
<b>Reward-Punishment Combination</b>		
+, -	0.0	0.0
-, /	0.0	11.6
+, -, /	2.3	2.3
<b>Total</b>	<b>2.3</b>	<b>23.9</b>
<b>Nonreinforcement</b>		
**	55.8	13.9



reinforcement combinations that were dispensed during the 43 sequences of P-T imitation. These findings suggest that during P-T imitation students tended either to dispense no reinforcement or to reward both the student M and teacher O with little or no punishment being dispensed. M and O rewarded one another often during P-T imitation: the teacher O rewarded the student M on 60.3% of the total P-T sequences while the student M rewarded the teacher O on 72% of the P-T sequences.

Tables 9 and 10 present the reinforcement combinations that were dispensed during the 59 sequences of T-P imitation. These findings are consistent with the reinforcement findings for P-T imitation. Again the students tended either to dispense no reinforcement or to reward both the M and O. As well, the student O and teacher M rewarded one another often: the student O rewarded the teacher M on 59.4% of the T-P sequences while the teacher M rewarded the student O on 62.7% of the T-P sequences.

Tables 11 and 12 present the reinforcement combinations that were dispensed during the 227 sequences of P-P imitation. Students again tended to dispense no reinforcement or to reward M and O. As well, M and O rewarded one another often. The student O rewarded the student M on 66.7% of the total P-P sequences while the student M rewarded the student O on 64.9% of the sequences. During P-P imitation the teacher dispensed no reinforcement to M on 56.6% of the sequences and no reinforcement to O on 62.8% of the sequences. The teacher rewarded M and O on 27.8% of the total P-P sequences. However, he punished the student M twice as often as he punished the student O.

Summary. The data presented in the preceding six tables can be summarized as follows:



Table 9

Type of Reinforcement (Vicarious) Dispensed to M when M is the Teacher and O is a Student (T-P Imitation)

Reinforcement	% of Total Sequences Students Reinforced	% of Total Sequences Student O Reinforced
<b>Reward</b>		
+	15.3	13.6
/	13.6	15.3
+, /	16.9	30.5
<b>Total</b>	<b>45.8</b>	<b>59.4</b>
<b>Punishment</b>		
-	1.7	1.7
<b>Reward-Punishment Combination</b>		
+, -	0.0	5.1
-, /	1.7	8.5
+, -, /	3.4	6.7
<b>Total</b>	<b>5.1</b>	<b>20.3</b>
<b>Nonreinforcement</b>		
**	47.5	18.6



Table 10

Type of Reinforcement (Direct) Dispensed to 0 when M is the Teacher and 0 is a Student (T-P Imitation)

Reinforcement	% of Total Sequences Students Reinforced	% of Total Sequences Teacher M Reinforced
<b>Reward</b>		
+	16.9	8.5
/	13.6	23.7
+, /	13.6	30.5
<b>Total</b>	<b>44.1</b>	<b>62.7</b>
<b>Punishment</b>		
-	3.4	6.7
<b>Reward-Punishment Combination</b>		
+, -	0.0	3.4
-, /	0.0	3.4
+, -, /	3.4	1.7
<b>Total</b>	<b>3.4</b>	<b>8.5</b>
<b>Nonreinforcement</b>		
**	49.2	22.0



Table 11

Type of Reinforcement (Vicarious) Dispensed to M when M  
and O are Students (P-P Imitation)

Reinforcement	% of Total Sequences Students Reinforced	% of Total Sequences Teacher Reinforced	% of Total Sequences Student O Reinforced
<b>Reward</b>			
+	11.0	12.8	18.5
/	7.1	9.7	22.1
+, /	8.4	5.3	26.1
<b>Total</b>	<b>26.5</b>	<b>27.8</b>	<b>66.7</b>
<b>Punishment</b>			
-	.8	8.0	0.0
<b>Reward-Punishment Combination</b>			
+, -	0.0	2.2	0.0
-, /	.8	1.3	.8
+, -, /	0.0	4.0	3.5
<b>Total</b>	<b>0.8</b>	<b>7.5</b>	<b>4.3</b>
<b>Nonreinforcement</b>			
**	70.8	56.6	27.4



Table 12

Type of Reinforcement (Direct) Dispensed to O when M  
and O are Students (P-P Imitation)

Reinforcement	% of Total Sequences Students Reinforced	% of Total Sequences Teacher Reinforced	% of Total Sequences Student M Reinforced
<b>Reward</b>			
+	13.2	12.8	15.0
/	7.1	9.7	26.9
+, /	5.8	5.3	23.0
<b>Total</b>	<b>26.1</b>	<b>27.8</b>	<b>64.9</b>
<b>Punishment</b>			
-	0.0	4.9	0.8
<b>Reward-Punishment Combination</b>			
+, -	0.0	2.2	0.0
-, /	0.0	0.8	0.8
+, -, /	0.0	1.3	2.2
<b>Total</b>	<b>0.0</b>	<b>4.3</b>	<b>3.0</b>
<b>Nonreinforcement</b>			
**	72.6	62.8	30.9



- (1) Students tended either to dispense no reinforcement or to reward both M and O. They rarely punished and when they did it usually was coupled with reward (a reward-punishment combination).
- (2) The teacher tended to dispense no reinforcement or to reward both M and O.
- (3) Most of the punishment that was dispensed was dispensed by the teacher.
- (4) The greatest percentage of reward-punishment combination was dispensed by M and O during T-P and P-T imitation.
- (5) M and O were within three feet of each other during more than 50% of the imitative sequences.
- (6) The Ms and Os dispensed reinforcers to each other on a minimum of 69.1% of the total imitative sequences. This exchange of reinforcers between M and O appeared to be a pivotal variable with respect to the relationship between imitation and social reinforcement.

Type and Frequency of Reinforcement Exchanged Between M and O.

Table 13 presents the type and frequency of reinforcers exchanged by M and O in each of the three types of M-O dyads.

During T-P and P-P imitation the number of rewards exchanged by M and O was greater than the number of punishments. During P-T imitation however, the reverse was true. P-T imitative sequences were unique in that O punished M for emitting certain behaviors and then imitated the behavior he had punished.

The + and - scores for each of the M-O dyads in P-P, P-T, and



Table 13

The Type and Frequency of Reinforcement Exchanged Between  
M and O During and/or Contingent Upon Imitation

M-O Dyad	Number of Imitative Sequences	Frequency of Reinforcement		Frequency of Reinforcement	
		O Dispensed to M	M Dispensed to O	+	-
T-P	59	62	23	42	23
P-T	43	40	64	18	25
P-P	227	154	15	127	10



T-P imitation were analyzed to determine if the exchange (giving and receiving) of these reinforcing events was balanced or reciprocal. The chi square analyses of the + and - scores exchanged in each of the M-O dyads is reported in Table 14. The analyses indicated that during P-P and T-P imitation the M-O dyads were "in balance" vis a vis the exchange of -s (chi squares not significant). In other words, there was no difference between the number of -s given and received in each of these dyads. A difference, or imbalance, held however, for the exchange of +s during P-P and T-P imitation, as revealed by the significant chi squares. The significant interaction effect noted for both P-P and T-P imitation indicated that the differences in the number of +s given and received could be a function of particular M-O dyads. Inspection of the data for each of the M-O dyads in P-P and T-P imitation revealed that this imbalance held only for those sequences in which M was  $S_1$ ,  $S_5$ ,  $S_8$ , and T.

During P-T imitation there was no reciprocity in the exchange of +s or -s between M and O. The significant inequities between the giving and receiving of social reinforcers during this type of imitation (as revealed by the significant chi squares) may be associated with the finding that the amount of punishment exchanged by M and O during this type of imitation exceeded the amount of reward.

Summary. The type and frequency of reinforcement exchanged between M and O can be summarized as follows:

- (1) During T-P and P-P imitation the number of rewards exchanged between M and O was greater than the number of punishments.



Table 14

Chi Square Analysis of the Rewards and Punishments  
Exchanged by Ms and Os During P-P, P-T,  
and T-P Imitation

Type of M-0 Dyad	$\chi^2_A$		$\chi^2_{\text{Total}}$		$\chi^2$ Interaction	
	+	-	+	-	+	-
P-P	5.06 df=1	1.0 df=1	79.22** df=7	2.04 df=2	72.16 df=7	1.04 df=2
P-T	8.34 df=1	17.1** df=1	10.37** df=2	21.07** df=2	2.03 df=2	3.97* df=2
T-P	3.84* df=1	0.0 df=1	14.23** df=3	3.33 df=3	10.39* df=2	3.33 df=3

\* significant at .05 level

\*\* significant at .01 level



- (2) During P-T imitation the number of punishments exchanged by M and 0 was greater than the number of rewards.
- (3) During P-P imitation the exchange of +s between the student M and student 0 was nonreciprocal; i.e., the difference between the number of +s given and the number of +s received was significant. The exchange of -s between the student M and student 0 however was reciprocal.
- (4) During the P-T imitation the exchange of both +s and -s between the student M and the teacher 0 was nonreciprocal; i.e., the difference between the giving and receiving of these reinforcements was significant.
- (5) During T-P imitation the exchange of +s between the teacher M and the student 0 was nonreciprocal; i.e., the difference between the numbers of +s received and the number of +s given was significant. The exchange of -s between the teacher M and the student 0 however was reciprocal.

Type and Frequency of Vicarious and Direct Reinforcement. The vicarious reinforcement data obtained for the 329 imitative sequences is presented in Table 15.

The students dispensed decidedly more vicarious reward than punishment. The difference between the number of +s and -s dispensed by students to M was statistically significant for all three types of imitation (P-P imitation  $\chi^2 = 74.66$ ,  $df = 1$ ; T-P imitation  $\chi^2 = 56.10$ ,  $df = 1$ ; P-T imitation  $\chi^2 = 24.72$ ,  $df = 1$   $p < .001$  in all cases).

Although the teacher dispensed twice as much vicarious punishment as the students to the student M during P-P imitation, the teacher was also significantly more rewarding than punishing during these same



Table 15

Type and Frequency of Vicarious Reinforcement Dispensed  
 During and/or Contingent upon Imitation  
 in the Three Types of M-O Dyads

M-O Dyad	Dispenser of Vicarious Reinforcement	Frequency of Vicarious Reinforcement	
		+	-
P-P	Ps to M	112	14
	T to M	121	53
T-P	Ps to M	74	6
P-T	Ps to M	32	2



sequences ( $\chi^2 = 56.10$ ,  $df = 1$ ,  $p <.001$ ).

The difference between the students and the teacher in terms of the amount of vicarious reinforcement they dispensed to M during P-P imitation was statistically significant at ( $\chi^2 = 15.75$ ,  $df = 1$ ;  $p <.001$ ). On the basis of this finding it can be concluded that during P-P imitation the teacher dispensed significantly more vicarious reward and punishment than the students.

The direct reinforcement data obtained for the 329 imitative sequences is presented in Table 16.

The difference between the number of +s and -s dispensed by students to 0 during P-P, T-P, and P-T imitation was statistically significant (P-P imitation  $\chi^2 = 56$ ,  $df = 1$ ; T-P imitation,  $\chi^2 = 24.88$ ,  $df = 1$ ; P-T imitation  $\chi^2 = 15.04$ ,  $df = 1$ :  $p <.001$  in all cases). Thus, we can conclude that students dispensed decidedly more direct reward than punishment to 0s.

During P-P imitation, the teacher dispensed twice as much punishment to 0 as the students and the student M combined, however, the teacher was also significantly more rewarding than punishing ( $\chi^2 = 15.6$ ,  $df = 1$ ,  $p <.001$ ) during P-P imitative sequences.

Chi square analysis of the direct reinforcement dispensed by Ms and 0s reveals that during P-P imitation student Ms were significantly more rewarding than punishing ( $\chi^2 = 98.20$ ,  $df = 1$ ,  $p <.001$ ). During P-T and T-P imitation however, there was no difference between the amount of reward and punishment dispensed to 0 by the student M and teacher M respectively (P-T imitation  $\chi^2 = 0.82$ ,  $df = 1$ ,  $p <.05$ ; T-P imitation  $\chi^2 = 4.98$ ,  $df = 1$ ,  $p <.05$ ).



Table 16

Type and Frequency of Direct Reinforcement Dispensed  
 During and/or Contingent upon Imitation in  
 the Three Types of M-O Dyads

M-O Dyad	Dispenser of Direct Reinforcement	Frequency of Direct Reinforcement	
		+	-
P-P	M to O	127	10
	Ps to O	81	9
	T to O	78	35
T-P	M to O	42	23
	Ps to O	46	9
P-T	M to O	18	25
	Ps to O	22	2



The differences between the direct reinforcement dispensed during P-P imitation by the student M, the students, and the teacher was statistically significant ( $\chi^2 = 15.78$ ,  $df = 2$ ,  $p < .001$ ). The differences between the direct reinforcement dispensed during P-T and T-P imitation by the students and the teacher or student M also was statistically significant (P-T imitation  $\chi^2 = 15.04$ ,  $df = 1$ , T-P imitation  $\chi^2 = 15.3$ ,  $df = 1$ ;  $p < .001$ ).

Summary. The following is a summary of the vicarious reinforcement findings.

- (1) The students dispensed significantly more vicarious reward than punishment during P-P, P-T, and T-P imitation.
- (2) Although the teacher dispensed twice as much vicarious punishment as the students during P-P imitation, the teacher was also significantly more rewarding than punishing during these same sequences.
- (3) During P-P imitation the teacher dispensed significantly more vicarious reward and punishment to the student M than the students.

The direct reinforcement findings are summarized below.

- (1) The students dispensed significantly more direct reward than punishment to 0s during P-P, T-P, and P-T imitation.
- (2) Although the teacher dispensed twice as much direct punishment to the student 0 as the students during P-P imitation, the teacher was also significantly more rewarding than punishing during these sequences.
- (3) The Ms dispensed significantly more reward than punishment



to 0s during P-P imitation. During P-T and T-P imitation however, there was no difference between the amount of reward and punishment Ms dispensed to 0s.

- (4) During P-P, P-T and T-P imitation there was a significant difference between the dispensers of direct reinforcement in terms of the amount of reinforcement dispensed.

#### Relationship Between Imitation and Reinforcement

The reinforcement findings can be classified into four categories:

- (1) reinforcement dispensed to M by 0
- (2) reinforcement dispensed to 0 by M
- (3) vicarious reinforcement (reinforcement dispensed to M by others, not 0)
- (4) direct reinforcement (reinforcement dispensed to 0).

During an imitative sequence 0 could experience one, two or all three categories of reinforcement. The + and - totals in each of these reinforcement categories for each 0 were calculated and Spearman rank order correlation coefficient (Siegal, 1956) were computed to determine if there was an association between these reinforcement scores and the imitation scores for each 0. The rank order correlation coefficients between the reinforcement and imitation scores for each of the subjects is presented in Table 17.

The results reported in Table 17 reveal that for this sample, 0s' imitation of M was related to both vicarious and direct reward. Vicarious and direct reward affected the frequency of 0s' imitation of M. The nonsignificant coefficients for the other reinforcement



Table 17

Rank Order Correlation Coefficients Between Reinforcement  
and Imitation Scores for Each of the Subjects

Reinforcement Variable	Correlation Coefficient
+ M dispensed to O	.31
- M dispensed to O	.29
+ O dispensed to M	.34
- O dispensed to M	.56
vicarious reward	.65*
vicarious punishment	.43
direct reward	.68*
direct punishment	.28

\* significant at .05 level



variables allows us to conclude that they do not appear to be related to the frequency of O's imitation of M.

Summary.

- (1) O's imitation of M was related to both vicarious and direct reward.
- (2) Other reinforcement variables do not appear to be associated with imitation in this setting.



## Chapter 4

### DISCUSSION

The results of this study provide evidence that while in the classroom delinquent adolescents and their teacher frequently imitated one another and dispensed or received significantly more reward than punishment contingent upon that imitation. Indeed, reward, both vicarious and direct, was found to be an important independent variable causally related to imitation.

These non-laboratory findings are in agreement with laboratory findings which support the hypothesis that vicarious and direct reward increase the probability of modeling. However, while vicarious and direct punishment decrease the probability of modeling in the laboratory, such was not the case in this setting.

The reinforcement data reveals that the behavior of both M and O was on a combined reinforcement schedule, with both the number of unreinforced responses and the time intervals between reinforcements continually changing. This complex schedule of reinforcement, which increases resistance to extinction, may account for the perseverance of imitative responses which the observers noted but did not score.

The number of imitative responses emitted by each of the students and their teacher over the twelve class periods showed marked variation, revealing differing behavioral dispositions to imitate. These varying imitation scores will be considered in two ways: first, the changes in dispositions for individual subjects over the twelve class



periods, and second, the differences in dispositions between subjects.

Hanlon (1965) found that girls imitate more readily after isolation than boys. Examination of the behavioral dispositions of each subject, in the light of Hanlon's finding revealed that the three female Os who missed class because of confinement emitted an increased number of imitative responses during the class period following confinement.  $S_2$ , for example, attended the first and second class periods and emitted five and one imitative responses respectively. She did not attend the third class period because she had eloped from the Y.D.C. During the fourth class period she was confined to her room. When she returned to the fifth class period, following confinement, she emitted nineteen imitative responses, the highest number recorded for her. During the sixth class period she emitted only one imitative response. In comparison to the female subjects, the one male student placed in confinement did not imitate more readily following confinement. On the basis of these findings it is possible to suggest that for delinquent girls, the state of having been isolated facilitates imitation.

The data also provides some evidence that decrements in imitation scores for the student subjects is associated with length of time spent in the classroom during the forty minute class period. Rarely did a student arrive on time and remain in the classroom for the whole period. Rather, they tended to arrive late and walk in and out of the room a number of times during the period, or leave shortly after arriving. The teacher was the only subject consistent in terms of the length of time spent in the classroom during each class period. Examination of his behavioral disposition reveals that for the first five class periods he



had a low behavioral disposition to imitate; however, from the sixth to the twelfth class periods his disposition increased and varied, ranging from nine to one imitations per class period. One possible explanation for this change in disposition may be that by the sixth class period the teacher had become acclimatized to the audio-video recording equipment and was more natural in his interaction with the students during the last six classes.

A class of variables that may account for the differences in dispositions between subjects is personality traits. Data on personality traits was not collected, however it is plausible to hypothesize that certain traits within Os should facilitate imitation. Previous studies reveal that Os rated high on dependency (Ross, 1966) and authoritarianism (Epstein, 1966) showed more imitation than Os rated lower on these same measures. Perhaps differences in these traits, or others, facilitated or inhibited imitation for these subjects.

The data suggests that the affective relationship between M and O may be an important antecedent variable that increased imitation. The fact that Os were within three feet of Ms during more than 50% of the imitative sequences is of significance because "proximity" is an indicator of friendship selections (Hare, 1962; Lott and Lott, 1965). The effect of affectional friendship ties may also be associated with the finding that the O who imitated a given M most often tended in turn to be most frequently imitated by that M. Thus, the degree to which O likes M may be related to Os tendency to imitate M, and vice versa. This prediction is consistent with the results reported by Sampson and Insko (1964), however it is in contrast with Willis (1963) who found that the



degree to which O liked M was not related to O's tendency to imitate M. Obviously, future investigations are needed to clarify the effect of affectional ties between M and O on imitation.

The exchange of reinforcers between M and O comprised such a high percentage of the reinforcement data that the exchange was considered in detail. Analysis of the giving and receiving of reinforcers in terms of the reciprocity construct (Patterson and Reid, 1970, p. 133-177) was computed.

As used here, the term reciprocity . . . refers to that "balance of trade" which exists in most social interactions. Specifically, the term refers to an equity in the giving and receiving of positive and aversive consequences which occur in most social interactions. The first hypothesis refers to the assumption that reciprocity in fact exists in most dyadic interactions. This would require that, over a series of interactions, two persons reinforce or punish each other for approximately the same proportion of behaviors. For example, if person A reinforces person B for 50 percent of the interactions which B has with A, then A, in turn, will receive about the same proportion of positive reinforcers from B. . . . The proportions of giving and receiving should vary systematically for all combinations of dyads. (Patterson and Reid, 1970, p. 139-140).

The opportunity for a given M to dispense reinforcers to a particular O tended to equal the opportunity for the same O to dispense reinforcers to that M because each subject imitated at a rate equitable with the number of times other subjects imitated him or her. Given this equity, the number of +s and -s exchanged between M and O in each of the M-O dyads was examined using a chi square analysis. The analyses revealed that there were distinct differences between the types of M-O dyads in terms of reciprocity. During imitation involving a student M and a student O (P-P imitative dyad) the exchange of +s between M and O was not balanced, or reciprocal, whereas the exchange of -s was balanced. Similarly, imitation involving the teacher as M and a student O (T-P



imitation) was balanced in terms of the exchange of -s between M and O; but not balanced in terms of the exchange of +s. The Ms appeared to dispense more reward to Os during P-P and T-P imitation. This trend corresponds with the finding that the correlation coefficient between the number +s O dispensed to M and O's imitation of M was not significant, indicating that no relationship existed between the reward O dispensed to M and O's imitation of M.

During P-T imitation the exchange of +s between the teacher M and the student O was nonreciprocal, as was their exchange of -s. The nonreciprocal reinforcement patterns observed for this type of imitative dyad may be associated with the fact that during these sequences O dispensed more punishment than reward to M; however the nonreciprocal exchange of +s between M and O during P-P and T-P imitation would appear to invalidate this conclusion.

If Patterson and Reid's (1970) assumption that reciprocity exists in most social interactions is valid, the reciprocity data presented in the foregoing paragraphs would suggest that the interaction between M and O in this setting is not like most other social interactions and is "pathologic" (Patterson and Reid, 1970, p. 138) in terms of the exchange of reinforcers. This conclusion, if it is valid, would indicate that intervention to facilitate the kind of social reinforcement reciprocity found in non-deviant interactions, is warranted.

The significance of the interaction between M and O is further highlighted by the finding that the O who imitated a given M most often tended in turn to be most frequently imitated by that M. Further, the purported affective relationship between M and O, and the finding that they were in close proximity to each other on more than 50% of the



imitative sequences emphasize the importance of focusing on friendship pairings in the rehabilitation of juvenile offenders.

#### Limitations of the Study

The major limitations of this study are as follows. The use of the audio-video equipment to observe the classroom behavior of the teacher and the delinquent students affected the naturalness of their interaction. The novelty of the equipment and the fact that they could observe their own behavior on the television monitor during class time affected their behavior to a large degree. However, in a setting such as an institution for adolescent delinquents where the subjects under observation would be extremely unlikely to behave naturally with an observer openly recording their behaviors, the use of audio video equipment was decided as the best available alternative.

The events classified as reinforcing stimuli, because they were not empirically tested with this sample, must be considered as presumed reinforcers. Further, how the individual subjects may have interpreted and utilized the reinforcements they received depended on many factors outside the scope of this study. For example, the unique relationship between a student subject and his or her reinforcing peers would partially determine whether the subject would interpret a reinforcing "smile" as sincere "friendliness" or sarcastic "negativism." A longitudinal study measuring changes in responses with respect to reinforcements received would be useful to determine the differences in how delinquent students and their teacher interpret and are influenced by the reinforcement they receive from one another.



## Chapter 5

### IMPLICATIONS

A social learning model was used to identify some of the behavioral processes associated with eliciting and controlling behavior within a peer group of institutionalized juvenile offenders. The results provided evidence that while in the classroom the delinquent adolescents and their teacher frequently imitated one another and dispensed or received significantly more reward than punishment contingent upon that imitation. Indeed, the high frequency of imitative behavior and contingent reinforcement suggests that the classroom setting can be viewed as a "teaching machine" (Beuhler, Patterson, and Furniss, 1966, p. 158) programmed to elicit, shape and control the behavior of both the teacher and the delinquent adolescents.

It therefore seems reasonable to conclude that the adoption of, and adherence to, accepted academic patterns of behavior in the institutional classroom is highly dependent upon systematic exposure of delinquent students to models who exhibit appropriate social and academic behavior. These modeling experiences should be accompanied by the systematic application of positive reinforcement contingencies to both models and students. As well, the teacher should be systematically exposed to models who exhibit effective teaching behavior. This modeling experience, like that for the delinquent students, would be facilitated by the systematic application of positive reinforcement contingencies to both the teacher model and the teacher observer.



The justification for focusing on modeling effects in the educational area is that this area is so crucial to the rehabilitation of habitual juvenile offenders. Regardless of what other objectives may be selected in the rehabilitation of delinquents, little progress can be made in changing their antisocial behavior until the gross deficits in educational skills, which are requisite for satisfactory vocational adjustment, are eliminated. Some persons may profit ultimately from lengthy introspection and theorizing about the multiple ramifications of having had certain types of interpersonal experiences, but for the juvenile delinquent, insight-oriented exploration may be completely impractical in helping him overcome his educational deficits. Unless he can find a useful and satisfying niche for himself within complex modern society, attempts to modify his behavior in broad, nonvocational areas may, in all likelihood, come to naught (Stuart, 1969, p. 21-28). What can be done to direct the young offender onto a socially appropriate educational and vocational course?

Providing juvenile delinquents with opportunities to observe acceptable social and academic behavior in healthy, accepting persons, and also opportunities to imitate this type of behavior should increase the probability that acceptable responses will occur, particularly if both the models and observers are the recipients of reward. Similarly, modeling experiences for teachers should increase the probability that their teaching behaviors are appropriate. Such modeling experiences might be designed as follows:

(1) People Attending the Modeling Session

Each session would be attended by 6-8 people, 2-4 models and four observers (teachers or delinquent students,



whichever the case may be).

(2) Format of the Modeling Session

1) Acquisition or Learning

- a) One model introduces and describes the scene for the session.
- b) Models role play according to a script while the students or teachers observe. (The script would be developed by staff and models before the session and may be kept and reused for other sessions). Role playing would include the exchange of social reinforcers.
- c) One observer would be called upon to summarize and explain the content and outcome of the role played scene.
- d) Models comment and discuss the scene and then replay a video-tape recording of the session. The replay should contain the behavior of both models and observers.

2) Performance

- a) Observers pair up and imitate (rehearse) the roles and behaviors modeled.
- b) A short break.
- c) A replay of each pair of observers role playing is presented on the TV monitor.
- d) Final summaries and comments concerning the scene, aspects of its performance and general



applicability discussed.

Modeling scene scripts could be developed by the teachers and students meeting informally. These informal chats could be tape recorded and the focus of the discussions could be the content and "parts" of the modeling scene. Alternatively, actual experiences of teachers in their day-to-day interaction with the delinquent students could be used. Each scene would have a particular theme; for example, the problem of negative peer pressure or talking with a teacher about an academic concern. In each situation the emphasis would be placed on appropriate behaviors being modeled in order to emphasize their potential usefulness.

The video taped role plays could be stored and evaluated later by the models and staff, especially with regard to the appropriate behaviors modeled. In this way, an objective picture of the model's behavior as it was seen by the observers could be assessed, in order to maximize the effectiveness of the sessions.

A project, similar to the one suggested here, is presently being undertaken at Cascadia, a juvenile rehabilitation center in Tacoma, Washington (Sarason, 1968). Their preliminary data would seem to suggest that delinquent boys who were members of their experimental groups exhibited greater changes in their behavior and attitudes than did matched control groups of boys who did not participate. Their research questions were as follows: (a) Can juvenile offenders between the ages of 15 and 18 benefit from concentrated exposure to healthy significant others? (b) Can this exposure lead to observable and quantifiable changes in behavior? Their research is based on the assumption that both of these questions can be answered affirmatively.



Positive effects might also be obtained if individuals or small groups of delinquents were exposed frequently to social agents near their own age who could model appropriate behavior and also reinforce acceptable behaviors emitted by the juvenile offenders. Many college students or high school students participating on a regular basis in classroom activities involving social interaction with delinquent adolescents would allow the adolescent to receive numerous positive reinforcements from non-staff members who would be nearer their own age. If peer influence reaches a peak of effectiveness during adolescence as has been suggested in the literature, the adolescent delinquent would be extremely susceptible to the social reinforcements offered by these "volunteers." McDavid and McCandless (1962) emphasize that the probable differential effect of adult and peer social reinforcements on juvenile offenders has not been given sufficient research attention, but it could be expected that the reinforcements given by peers would be more influential in modifying the delinquent adolescent's behavior than adult offered reinforcement.

The addition of new behaviors in the teacher's repertoire aimed at facilitating the academic behavior of juvenile offenders will also require reinforcement if they are to be maintained. Patterson (1969, p. 154) suggests that although the assumption is often made that the reinforcer which maintains the behavior of the teacher is the knowledge that he has been successful in "helping the child" this assumption probably does not fit the facts. He suggests that altruism is not a "powerful reinforcer" and suggests that the school arrange reinforcers contingent upon the teacher's management of deviant behavior. The



behavior of teachers that results in improved academic behavior on the part of students could be reinforced in an institution for juvenile offenders if the teachers and administrative staff negotiated and established reinforcers that could be dispensed upon effective teaching behavior.

If the suggestions in this section are sound, the very notion of recidivism will become extinct.



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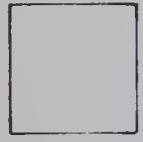
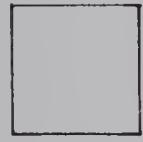
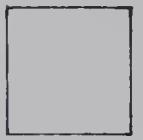
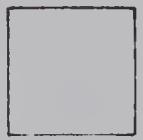
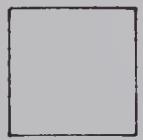
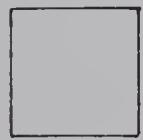
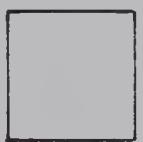
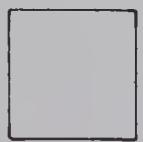
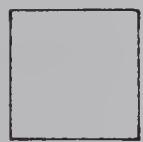
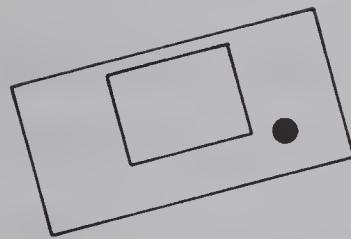
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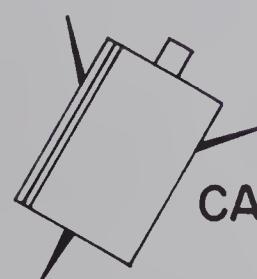
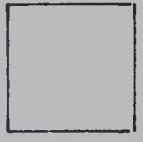
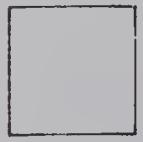
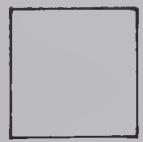
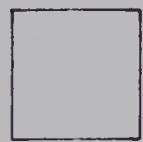
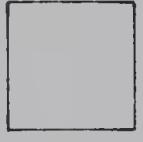
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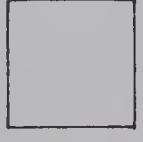
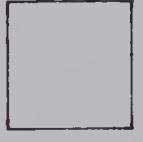
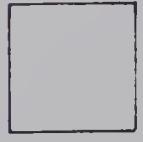
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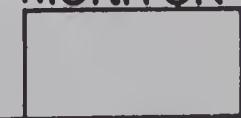
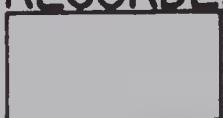


CAMERA



A.V.  
RECORDER T.V.  
MONITOR

MAGAZINE RACK,  
BOOK STORAGE





## APPENDIX B

### Type of Audio Video Equipment Used

Camera: Sony A.V.C. 3200

Lens: VCL 20, 20-80 mm lens

Recorder: Ampex VR 5100 H.B.



## APPENDIX C

### Criteria used for Classifying Reinforcement as "Reward"

#### 1. Acts\* scored in Bales Interaction Category 1: Seems Friendly<sup>1</sup>

Shows solidarity, raises other's status, gives help, reward:

a. Initial and responsive acts of active solidarity and affection: Includes hailing the other, waving, drawing near him in order to speak, greeting him by saying "hello" or in some other friendly manner, approaching, touching, shaking hands, placing a hand on the shoulder or clapping the other on the back, putting the arm around the other, or linking arms, welcoming the other, extending an invitation to him to be one of the in-group, treating him to food or drink, or some other symbol of solidarity and acceptance. Includes acts in return to a friendly gesture, such as accepting a treat, accepting an offer of help or assistance, thanking the other, accompanying or escorting him, saying or waving "goodbye." Includes any indication of mannerly consideration for the other, any indication of good will, any gesture that indicates that the actor is friendly, congenial, sociable, affiliative, cordial, or informal. A friendly comment on the weather or some other matter of common interest to "break the ice" and start a conversation would belong here. Any act of befriending the other, of showing hospitality, of being neighborly, comradely, is included. The expression of sympathy - "I can see how you feel" - is included. Any indication in the course of interaction that the relationship is becoming more intimate or familiar, as when the actor begins to use the other's first name, or a nickname, or the term "we" where it has not been used before is recorded in this category. Any indication that the actor identifies himself with the other, or confides in him, or entrusts the self to him is included. Any act of adherence where the actor chooses to be a fellow member with the other, any act of making a covenant, or of forming an alliance, any act of adhering to the other or becoming a partisan on his behalf is included. Any indication that the actor is attracted to the other, all demonstrations of affection, love, and sexuality, such as acts of courting, flirting, coquetry, embracing, fondling, petting, caressing, kissing, are included.

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\*See Bales, 1970, pp. 68-70 for definition of an act.

<sup>1</sup>Bales, 1950, pp. 177-178. Updated description of Category 1 can be found in Bales, 1970, p. 100-105.



## Appendix C (continued)

b. Initial and responsive status-raising acts: Includes all acts which have the specific aim or effect of raising or enhancing the other's status, whether the initial status of the actor is assumed to be higher than that of the other, equal to it, or inferior to it. In situations in which the status of the actor is assumed to be higher, included are praising, rewarding, boosting the other, giving approval or encouragement, or any statement, question, or comment in which the intent is to sustain, reassure, or bolster the status of the other. Examples: "That's fine," "You've done a good job," "Swell," "You've covered a lot of ground today." With regard to situations in which the actor and the other are presumed to be of equal status, included are complimenting, congratulating, showing approval of the other, giving credit to the other, showing enthusiasm for his views, applauding or cheering him. In situations where the actor is assumed to be of inferior status to the other, included are expressing gratitude or appreciation, showing admiration, esteem, or respect, wonder, awe, or reverence. Any act which indicates that the actor is attempting to imitate or emulate an admired superior is included. Includes praising, honoring, eulogizing a superior; lauding, acclaiming, extolling, idealizing, paying homage, deifying, adoring, or worshiping the other. The range is thus very great, from comparatively minor degrees of raising the other's status to very extreme recognitions of the other's superior status.

c. In response to Category 11: Includes any behavior in which the actor offers assistance to the other, volunteers, assumes a task or duty on behalf of the other or the group, offers to undertake a job which is indicated by a group decision, offers his services, assists, offers to contribute time, energy, money, or any other resource. Any act of sharing, of distributing something to the other, any giving out of materials, goods, or resources of activity, any attempts to make sure that the other is supplied with what he needs, invitations to the other to participate in some satisfaction or reward are included. More neutral or deliberate exchanges of one satisfaction for another, such as trading, paying, or loaning are included. The manifestation of any attitude the observer would interpret as altruistic, liberal, generous, self-denying, or self-sacrificing is included. Any act of bequeathing something or giving a gift to the other is included. Any behavior in which the actor defends the other, protects him, acts as a guardian for him, represents or advances his interests, vouches for him, certifies his integrity, speaks for him, advocates his cause, assists him when he is in need is included. Giving support, reassurance, comfort, consolation, encouragement, the showing of sympathy, pity, compassion, tenderness, expressing condolence and commiseration are included. Attempts to calm the other or assuage some hurt, by feeding him, nursing, healing, gratifying needs of any kind are included. The manifestation of any attitude which the observer interprets as nurturant, gentle, maternal, paternal, benevolent, humanitarian, merciful, charitable is included.



## Appendix C (continued)

d. In response to Categories 10 and 12: Includes acts which may appear after a situation of difficulty or during a situation of estrangement, such as interceding or mediating, conciliating or moderating in a difficulty between two or more others. Acts of pacification, as when the actor mollifies the other, any attempt to allay opposition, to be discreet, tactful, diplomatic, to avoid wounding the other is included. Any act where the actor urges unity or harmony, agreement, cooperation, mutual obligation or expresses other values of solidarity is included. In cases of disagreement or antagonism between two or more others, the suggesting of a compromise, by some addition or amendment, expansion or modification of the suggested procedure is included.

2. Acts scored in Bales Interaction Category 3: Agrees<sup>1</sup>

Agrees, shows passive acceptance, understands, concurs, complies:

a. In response to Category 1 or 2: Includes any indication to the observer that the actor is modest, humble, respectful, unassertive, retiring.

b. In response to preceding acts of decision in the same category (3): Includes the kind of final confirmation by repetition or affirmation which one sometimes notices at the end of a difficult process of thinking or discussion, when the actor (or actor and other) appears to come to a decision, to make up his mind, to crystallize his intention, to adopt a plan of action or resolution, and accepts a responsibility to carry it on into overt action. Examples: "Yes, that's it." "That's what I'll do." "Then I guess we're all agreed on that."

c. In response to Category 4: Includes any concurrence in a proposed course of action or assent to a suggestion the other has made. Examples: "I second the motion." "Let's do that." Includes any act (not already classified in Categories 4, 5, and 6) in which the actor either verbally or overtly complies with a request or suggestion, obliges the other, conforms with some direction or desire of the other, cooperates with an order, or does as he has been requested. The carrying out of any activity which has been decided by the group or the other is included. Yielding, obeying, following, or desisting from some activity when requested are included.

d. In response to Category 5: Includes agreement with an observation or report, analysis, or diagnosis which the other has made; that is, belief, confirmation, conviction, or accord about facts,

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<sup>1</sup>Bales, 1950, p. 179-181. Updated description of Category 3 can be found in Bales, 1970, p. 109.



## Appendix C (continued)

inferences, and hypotheses. Examples: "That's the way I see it too." "I think you are right about that." "Yes, that's true." "Precisely." Similarly includes agreement, approval, or endorsement of an expression of value, feeling, or sentiment. Examples: "I feel the same way you do." "I hope so too." "Those are my sentiments exactly." "That's right."

e. In response to Category 6: Includes giving any sign of recognition, interest, receptiveness, readiness, responsiveness, such as looking at the speaker, sitting erect, or getting into a position to see or hear. Includes giving specific signs of attention to what the other is saying as he goes along, as a means of encouraging him to say what he wishes, by nodding the head, saying "I see," "Yes," "M-hmn"; completing by adding a word the other searches for or is hesitant to say, or otherwise aiding and facilitating communication. Includes showing comprehension, understanding, or insight, after a period of puzzlement and subsequent explanation by the other. Examples: "Oh." "I see." "Yes." "Sure, now I get it."

f. In response to Category 10: Includes admitting an error or oversight, admitting that some objection or disapproval of the other is valid, conceding a point to the other, giving way, withdrawing politely, asking the other's pardon. Includes introductory phrases which anticipate disagreement of the other and attempt to forestall it by admitting the point in advance. Examples: "Now I may be wrong about this. . . ." "This is not an important point perhaps. . . ."

g. In response to Category 11: Includes any indication of a permissive attitude, where the other is led to understand that he is accepted "as he is," so that the incorrectness of his solution to any problem or the quality of his performance does not adversely affect his status, so that he can "make mistakes without blame," and is reassured that he does not need to feel anxious. With regard to the permitting of activity on request of the other, includes all acts in which the actor gives the other freedom to do something, consents to a request, condones, countenances, or legalizes some activity of the other; in which he grants a privilege, abrogates or sets aside a custom or requirement for the other, excuses, forgives, pardons, or exonerates the other from the blame of some misdeed. Includes the manifestation of any attitude which the observer interprets as benign, kind, genial, good-natured, indulgent, lenient, forbearing, or tolerant. Includes the giving of approval of required work, as in situations where the other must have approval of his work at a given stage before going on to the next stage.

h. In response to Category 12: Includes acts which indicate that the actor is submissive, acquiescent, pliant, meek, in response to aggression directed toward him. Includes allowing the self to be talked down, surrendering, giving in, acknowledging defeat, renouncing



## Appendix C (continued)

a goal or object in favor of the other who demands it, standing aside, taking a back seat, letting the other push by aggressively and have the best. Includes any act in which the actor submits passively, allows himself to be bullied, dispossessed of objects, where he accepts coercion, domination, injury, blame, criticism, censure, punishment, without retaliation, rebuttal, rebellion, or complaint.

3. Proximity

- (a) Scoring Unit: One foot of video-tape
- (b) Definition: During an imitative sequence, if an S was within a 3 foot radius of
  - (1) M during, or contingent upon M's behavior
  - (2) O during, or contingent upon O's behavior

a proximity score was recorded.

Proximity scores were then converted into seconds of proximity.



## APPENDIX D

### Criteria used for Classifying Reinforcement as Punishment

#### 1. Acts scored in Bales Interaction Category 10: Disagrees<sup>1</sup>

Disagrees, shows passive rejection, formality, withholds resources:

a. In response to Categories 1, 2, and 3: Includes any indication of an attitude which the observer considers over-cool, frigid, inexpansive, unsmiling. Any situation in which an emotional response would be expected, where the actor refuses to give applause, or is unappreciative, unacknowledging, ungrateful, unallured, "hard to please," "hard to get," is included. Includes passive forms of rejection, such as remaining immobile, rigid, restrained, silent, close-mouthed, uncommunicative, inexpressive, impassive, imperturbable, reticent, responseless, in the face of overtures of the other. Includes any passive withholding of love or friendship, any indication that the actor is psychically insulated, detached, isolated, indifferent, disinterested, impersonal, aloof, formal, distant, unsocial, reserved, secluded, unapproachable, exclusive, or forbidding. Refraining from intimacies and confidences where the other appears to be seeking this kind of response is included. All undetermined member-to-member contacts, that is, asides, whispering, winks, etc., while the main discussion is going on between others are classified in this category as rejections by both participants of the rest of the group. Working at something other than the problem with which the group is concerned, when there is an expectation that all will be attending or actively participating is included. Speaking or paying attention to outsiders, such as observers, when the group as a whole is working on another problem is included. (More positive and aggressively toned acts of rejection, such as actually excluding the other, abandoning him, deserting him, dropping, rebuffing, repulsing, jilting, are marked in Category 12.)

b. In response to Category 4: Includes demurral with regard to suggestions made, any act in which the actor appears to be skeptical, dubious, cautious about accepting the proposal, hesitant, critical, suspicious, or distrustful. (More positive and aggressively toned acts of demurral are scored in Category 12.)

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<sup>1</sup>Bales, 1950, p. 188-190. Updated description of Category 10 can be found in Bales, 1970, p. 123-124.



## Appendix D (continued)

c. In response to Categories 5 and 6: Includes the milder degrees of disagreement, disbelief, astonishment, amazement, or incredulity regarding reports and observations, inferences, or diagnoses of interpretations made by the other. More marked forms of strictly ideational disagreement are also included, as when the actor amends or corrects another's description of the situation, his interpretation or diagnosis, contradicts something the other has said. (Includes disapproval of an expression of value or feeling only if very mild and confined to the actual expression or suggestion, and it is made plain by some means that the disapproval does not extend to the other as a "person." Very usually, when moral judgments or disapproval are applied to expressions of feeling or suggestions, they reflect so strongly on the person making them that they should be scored under Category 12.)

d. In response to Categories 7, 8, 9, 11, 12: Includes failing to pay attention when the other is speaking, failing to give a requested repetition, disregarding the other, ignoring a request of any kind or a complaint, by direct evasion, postponement of answer without expressed reason or consideration for the other, equivocation, delay, noncommittal hedging. More generally, includes any refusal to act which frustrates the other, thwarts, balks, blocks, obstructs, or puts barriers in the way, any behavior which restrains, hinders, limits the ongoing activity of the other, confines, constrains, or stands in his way, or which renders his efforts vain, upsets his plans, forestalls, contravenes, foils, or checkmates him. Includes any act of withholding resources, the manifestation of any attitude which the observer interprets as possessive, retentive, retractive, or secretive. Any act in which the other is denied something requested, in which the actor disappoints the other, refuses to let the other participate in some satisfaction or have access to some resource may be included here, if the aggressive tone is comparatively low. (As the active, outgoing aggressive element increases, the activity should be scored in Category 12.)

e. In response to previous acts in Category 10: If the actor has made a suggestion, and someone else in the meantime has disagreed with him, when the actor returns to defend or restate his original definition of the situation or proposal, his return is marked in this category as disagreement. (In general, only the initial reaction of disagreement is marked in the present category, when the disagreement is essentially ideational. The arguments which follow, in the form of statements about the situation, analyses of the facts, alternative suggestions, rhetorical questions, etc. are scored in their respective categories. Example: "I don't think so. It seems to me that there were more than that. In fact, I remember seeing at least five." In the foregoing statement only "I don't think so," would be scored in the present category. The argument which follows in support is broken up and scored in the categories above as usual.)



## Appendix D (continued)

2. Acts scored in Bales Interaction Category 12: Seems Unfriendly<sup>1</sup>

Shows antagonism, deflates other's status, defends or asserts self:

a. Autocratic control: Includes attempts to control, regulate, govern, direct, or supervise in a manner which the observer interprets as arbitrary or autocratic, in which freedom of choice or consent for the other person is either greatly limited or nonexistent, with the implication that the other has no right to protest or modify the demand but is expected to follow the directive immediately without argument. Includes the arbitrary assignment of a role, the location or relocation of the other, a defining or restricting of the other's powers by fiat, demands or commands such as "Come here!" "Stop that!" "Hurry up!" "Get out!" Any act in which the actor peremptorily beckons, points, pushes, pulls, or otherwise directly controls or attempts to control the activity of the other is included. More extreme acts of dismissal or expulsion, where the actor evicts, discharges, cashiered, banishes the other are included. Includes any act in which the observer interprets the attitude of the actor to be overbearing, dogmatic, assertive, imperious, inconsiderate, or severe. Includes arbitrary attempts to lay down principles of conduct, standards, or laws, arbitrary attempts to judge or settle an argument, to give a decision, to force, compel, coerce, subdue, subject, tame, master, dominate. Includes acts in which the actor prohibits the other from doing something, represses the other, proscribes some activity, interdicts, taboos, gives warnings, threats.

b. Autonomy: Includes any response to an attempt at control in which the actor shows active autonomy, is noncompliant, unwilling, or disobliging, where he resists some effort or imagined effort of a superior other to take some satisfaction from him. Includes any act in which the actor rejects, refuses, or purposefully ignores directions, commands, demands, or authoritative requests. Includes any behavior in which the actor defies authority, is negativistic, stubborn, resistant, obstinate, refractory, contrary, sulky, or sullen. Includes shrugging the shoulders, avoiding or quitting activities prescribed by authority, resisting coercion and restriction, trying in any manner to shake off restraint or get free. Includes any behavior which works against or circumvents authority, in which the actor shows independence, nonsubmissiveness, nonconformity, is disobedient, insubordinate, rebellious, irresponsible, willful, obstreperous, unrestrained, disorderly. Includes aggressive acts against authority, such as carping, harping, griping, nagging, badgering, harassing, annoying, perturbing, disturbing, or pestering

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<sup>1</sup>Bales, 1950, p. 193-195. Updated description of Category 12 can be found in Bales, 1970, p. 127-134.



## Appendix D (continued)

the other. Includes the manifestation of any attitude which the observer interprets as disrespectful, discourteous, impudent, bold, saucy, flippant, impervious, unashamed, or unrepentant when justly accused.

c. Status deflating: On the milder side includes conspicuous attempts to override the other in conversation, interrupting the other, interfering with his speaking, gratuitously finishing his sentence for him when the other does not want help, insisting on finishing, warding off interruption. With regard to active attacks or deflation of the other's status, any implication of inferiority or incompetence on the part of the other is included, such as appraising the other contemptuously, belittling, depreciating, disparaging, ridiculing, minimizing the other, reducing his remarks to absurdity, making fun of him. Includes any acts in which the actor would be described as maliciously sarcastic, satirical, ironical, in which the actor lampoons, caricatures, burlesques the other, or becomes unduly and insultingly familiar. Includes teasing, taunting, heckling, gloating, crowing, jeering, scoffing, mocking, sneering, bedeviling, goading, baiting, or provoking the other to say something indiscreet or damaging. Includes damning the other, finding fault with him, complaining, criticizing him; any act that would be interpreted as abusive, accusatory, acrimonious. Includes making charges against the other, imputing unworthy motives to him, blaming him, denouncing him, excoriating, berating, prosecuting, ill-treating or browbeating him. Includes any act of gossip, any libel, slander, smirching of the other's character, branding him with undesirable characteristics, demeaning him, tattling against him, informing against him, exposing him, or undermining his position, maligning, or discrediting him, placing him at a disadvantage or oppugning him. Includes tricking, hoaxing, duping, fleecing, hazing, humiliating the other or rendering him conspicuous. With regard to disapproval, includes acts ranging from mild forms of disapproval, such as reprimanding the other, blaming him, scolding him, admonishing or reminding him of his duty, on to more extreme forms, such as indications that the actor is shocked, indignant, appalled, scandalized at something the other has done, and shows horror or disgust. Includes any indication that the actor is indignant, offended, insulted, affronted. Includes the indications of moral indignation, such as a grim appearance, appearing incensed, irate, outraged, infuriated. Includes any act of showing ascendancy, any act that would be described as pompous, pontifical, ceremonious, self-opinionated, self-important, self-righteous, self-satisfied, self-complacent, or smug. Includes any act which would be regarded as haughty, proud, vain, arrogant, "upnish," snobbish, self-admiring, self-conceited, presumptuous, condescending, or disdainful.

d. Status defending: Includes any act in which the actor



## Appendix D (continued)

suppresses, conceals, hides, fails to mention, or justifies something which is considered discreditable, such as ineptitude, ignorance, a defect, some misdeed, failure, or humiliation. Includes the manifestation of any attitude which the observer would regard as indicating that the actor is "on his guard," has "a chip on his shoulder," such as interpreting a harmless remark as a slur, bristling when criticized, protesting, asserting one's own claims. Includes any act of defending or protecting the self, one's sentiments, or theories against assault, criticism, or blame, in an ego-involved way. Includes any act of self-vindication or exculpation, such as explaining, excusing, justifying, offering extenuations for or rationalization of inferiority, guilt, or failure, giving alibis, any act of disavowal, disacknowledging guilt, any disclaiming, denial, or refusal to admit guilt, inferiority, or weakness.

e. Status seeking: Includes any act in which the actor is self-assertive from a position which has the implication of lower status, in which he tries to impress the other with his importance, tries to be seen or heard, in which he pushes himself forward, dramatizes himself, poses as a unique, mysterious, incalculable person. Includes any behavior which the observer regards as exhibitionistic, spectacular, or conspicuous. Includes attempts to excite, amaze, fascinate, entertain, shock, intrigue, or amuse the other(s) as a means of raising one's own status. Includes any behavior in which the observer regards the subject as "acting," showing off, seeking applause or approbation, playing the clown, especially the making of jokes which fall flat or do not provoke a general laugh. Includes attempts to attract attention by mannerisms, expressive gestures, emphatic or extravagant speech, posturing, posing for effect, displaying the self, seeking the limelight, bragging, boasting, strutting, blustering. Includes praising the self, glorifying, exalting, applauding, approving, or advertising the self. Includes any act in which the actor tries to outdo the other, shows rivalry.

f. Diffuse aggression: Includes any manifestation of an emotional reaction to another which the observer would interpret as cranky, uncongenial, touchy, tiffish, testy, surly, irritable, ill-tempered, irascible, contumacious. Includes the manifestation of any attitude the observer would interpret as aggressive, combative, belligerent, pugnacious, quarrelsome, or argumentative. Includes any behavior in which the actor appears to be provoked, in which he shows annoyance, irritation, heat, anger, rage, or has a temper tantrum. Includes any indication of intolerance, malevolence, such as glaring, frowning, cursing, fuming, hissing, jostling, pushing, having a fit of rage, screaming, kicking, scratching. Includes moving or speaking in a threatening manner, challenging, defying, attacking, assailing, assaulting, hitting, striking, beating, fighting the other. Includes the manifestation



## Appendix D (continued)

of any attitude which the observer would interpret as destructive, cruel, or ruthless, or any act the observer interprets as resentful, vengeful, vindictive, or retaliative. Includes any indication of envy, jealousy, covetousness, cupidity, avarice, acquisitiveness at the expense of the other, or attempts to take something away from the other.

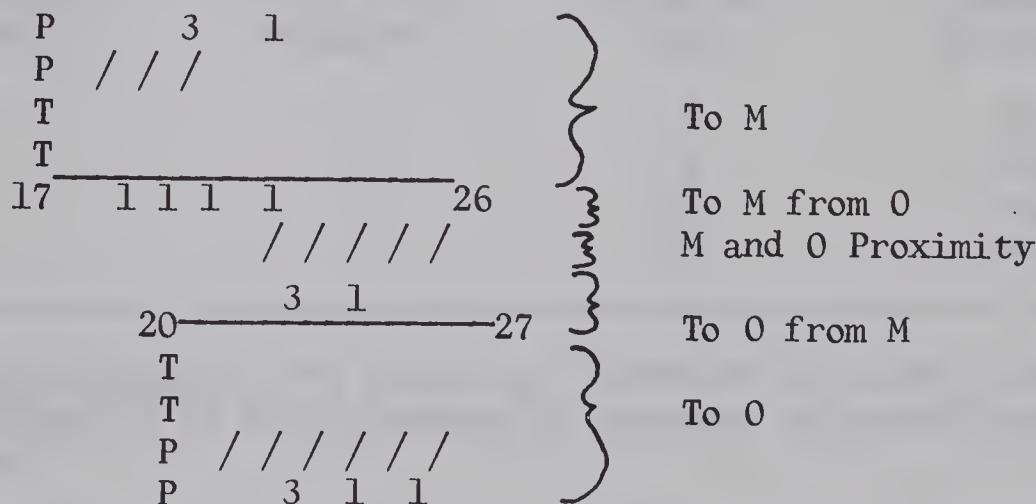


## APPENDIX E

### An Example of One Observer Recording Sheet

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Type of M-O Dyad:	P-P	Reinforcement	
Name of Model:	Norman	To Model	To Observer
Name of Observer:	Joanne	+ - 1	+ - /
Description of Imitation:		T - - -	T - - -
M - Walks over to door and looks out into hallway.		P 2 - 3	P 3 - 6
O - Walks over to door. Stands by Model, looks out into hallway.		<u>O 4 - 5</u> 6 - 8	<u>M 2 - 5</u> 5 - 11



Class #1  
 Sequence #: 43

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Key: T, P, O, M--Refers to Teacher, Peers, Observer, Model.

/ --Proximity per footage of A.V. tape. (Later converted into seconds of proximity.)

1, 3 --Acts in Bales Categories 1 and 3 (Reward).

17-26 --Number of Feet of A.V. tape during which Model's behavior occurred.

20-27 --Number of Feet of A.V. tape during which Observer's behavior occurred.

+

- --Number of acts scored as Bales Categories 1 and 3.

- --Number of acts scored as Bales Categories 10 and 12.



## APPENDIX F

Observer Reliability: Percentage-Agreement between  
Observers A and B for their Behavioral Records  
Collected from Audio-Video Playbacks

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1. Total imitative sequences observed:<sup>1</sup> the degree of agreement for imitative sequences observed.

Total Imitative Sequences Observed	Total Sequences Disagree*	Total Sequences Agree**	Percent of Agreement
329	61	268	81.5

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2. Positive reinforcement observed:<sup>2</sup> the degree of agreement for acts scored in Bales Categories 1 and 3 during 40 randomly selected imitative sequences.

Total Category 1&3 Acts Observed	Total Acts Disagree	Total Acts Agree	Percent of Agreement
Teacher 9	1	8	89.0
Peers 11	2	9	81.8
Observer 65	3	62	95.3
Model 56	3	53	94.6

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3. Punishment observed:<sup>2</sup> the degree of agreement for acts scored in Bales Categories 10 and 12 during 40 randomly selected imitative sequences.

Total Category 10&12 Acts Observed	Total Acts Disagree	Total Acts Agree	Percent of Agreement
Teacher 40	4	36	90.0
Peers 16	2	14	87.5
Observer 0	0	0	0
Model 0	0	0	0

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<sup>1</sup>Observers A and B independently observed all audio-video tapes to obtain imitation scores. Disagree means not observed by one of the observers.

<sup>2</sup>Observer A obtained scores on these measures for all imitative sequences. Observer B obtained scores on these measures for 40 randomly selected imitative sequences. Observer reliability determined by A and B's scoring of those 40 sequences.



## Appendix F (continued)

4. Amount of Proximity observed:<sup>2</sup> the degree of agreement for proximity scores scored during 40 randomly selected imitative sequences.

Total Peer Proximity Observed	Total Proximity Disagree	Total Proximity Agree	Percent of Agreement
108	2	106	98.2
Total Teacher Proximity Observed	Total Proximity Disagree	Total Proximity Agree	Percent of Agreement
62	0	62	100

Total Model-Observer Proximity Observed	Total Proximity Disagree	Total Proximity Agree	Percent of Agreement
123	1	122	99.2





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